

**Notice of Allowability**

Application No.

09/583,617

Examiner

Bernard E. Souw

Applicant(s)

GORUGANTHU ET AL.

Art Unit

2881

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Appeal Brief 04/18/2006.
2. ☒ The allowed claim(s) is/are 1,4-12,16-19,21 and 23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### ***Reopening of Prosecution After Appeal Brief or Reply Brief***

1. In view of the Appeal Brief filed on 04/18/2006, PROSECUTION IS HEREBY REOPENED. Reason for reopening this prosecution is set forth below.

### ***Finality of Last Office Action Withdrawn***

2. Upon thorough reconsideration of Applicant's arguments and weighing all the pertinent circumstances, the examiner realized and acknowledged his clear error(s) in issuing all the past office actions, the finality of the last Office action mailed 02/23/2006 is now withdrawn.

## **ALLOWANCE**

3. Claims 1, 4-12, 16-19, 21 and 23 are allowed.

The claims are subsequently renumbered to claims 1-16.

### ***Reasons for Allowance***

4. The following is an examiner's statement of reasons for allowance:

A. Claims 1, 4-12, 16-19, 21 and 23 are allowed over Yoshida (U.S. Patent No. 6,137,295) in view of Talbot et al. (U.S. Patent No. 6,091,249), because the applied prior art(s) fail to teach the claim limitations.

It is non-obvious to combine the Yoshida reference with the Talbot reference. The proposed modification of the Yoshida reference to replace the electron beam with a SEM directly opposes the Yoshida teachings thereby undermining and destroying both the purpose and operation of the prior art teachings - which is in direct contradiction of 35 U.S.C. § 103(a) and MPEP § 2143.01.

B. Claims 13 and 24 are allowed over Yoshida in view of Talbot et al. and further in view of Zingher (U.S. Patent No. 4,443,278), Gauthier et al. (U.S. Patent No. 4,172,228), and Nakasuji (U.S. Patent No. 6,465,783), because the applied prior art references fail to teach the claim limitations.

Regarding claim 13, it is non-obvious to modify the Yoshida's defect detection process to include inducing a defect in a die.

Regarding claim 24, the prior art references fail to teach the limitation of operating "*the die in a continuous loop known to cause a failure in a portion of circuitry*" and "*inducing a detectable response therefrom as a function of the portion of the circuitry failing.*"

C. Claim 14 is allowed over Yoshida in view of Talbot et al. and further in view of Ishihara et al. (U.S. Patent No. 6,185,324), because the applied prior art references fail to teach the claim limitations. As already cited previously in reference to claim 1, it is non-obvious to modify the Yoshida's with Talbot's teaching.

D. Claim 15 is allowed over Yoshida in view of Talbot et al. and further in view of Lo et al. (U.S. Patent No. 6,744,750) and Cole, Jr. (U.S. Patent No. 5,523,694), because the

applied prior art references fail to teach the claim limitations. As already cited previously in reference to claim 1, it is non-obvious to modify the Yoshida's with Talbot's teaching.

E. Claim 22 is allowed over Yoshida in view of Talbot et al. and further in view of Kim et al. (U.S. Patent No. 2002/0043628A1) and Yamazaki et al. (U.S. Patent No. 6,038,018), because the applied prior art references fail to teach the claim limitations. As already cited previously in reference to claim 1, it is non-obvious to modify the Yoshida's with Talbot's teaching.

F. Claims 24-29 are allowed over Yoshida in view of Nakasuji, Gauthier et al., Zingher, and Ishihara et al., because the applied prior art references fail to teach the claim limitations.

Regarding claim 24, the proposed combination of references fail to teach the limitation of directing an electron beam to the exposed region of the insulator and inducing a detectable response therefrom as a function of the portion of the circuitry failing.

With respect to independent claim 28 and dependent claim 29, the proposed combination of references fail to teach the limitation of scanning an electron beam across the exposed region of the insulator and inducing a detectable response therefrom as a function of the logic states of the circuit nodes, as claimed.

G. Claims 28 and 29 are allowed over Yoshida in view of Lo et al. (U.S. Patent No. 6,504,393), because the applied prior art references fail to teach the claim limitations.

The Yoshida reference fails to recite "*an electron beam inspecting method specifically used to inspect the logical states of a plurality of circuit nodes.*" In the

proposed modification with Lo et al., the latter fails to teach how to scan an electron beam across the exposed region and inducing a detectable response ms a function of the logic states. Thus, the proposed combination of Yoshida and Lo et al. is non-obvious.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Communications***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw, Ph.D., whose telephone number is 571 272 2482. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571 272 2477. The central fax phone number for the organization where this application or proceeding is assigned is 571 273 8300 for regular communications as well as for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571 272 5993.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 24, 2006

  
NIKITA WELLS  
PRIMARY EXAMINER  
08/16/06